

What is claimed is:

1. A control apparatus for controlling a regenerative operation of a vehicle motor comprising:
  - 5 a vehicle motor as a drive source of a vehicle;
  - an energy storage device, including plural cells that are connected to each other in series, for storing regenerative energy generated by a regenerative operation of the vehicle motor;
  - a total voltage measuring device for measuring a total voltage that is a sum of inter-terminal voltages of the plural cells;
  - 10 a cell voltage judgment device for determining whether the inter-terminal voltage of any one of the plural cells exceeds a predetermined regeneration limitation voltage;
  - a total voltage estimating device for determining, when it is determined by the cell voltage judgment device that the inter-terminal voltage of any one of the cells exceeds the predetermined regeneration limitation voltage, an estimated total voltage which is defined as a total voltage at a time when the inter-terminal voltage of the one of the cells reaches a regeneration prohibition voltage that is higher than the predetermined regenerative operation limiting voltage; and
  - 15 a control device for setting an amount of regeneration depending on a difference between the estimated total voltage determined by the total voltage estimating device and the total voltage measured by the total voltage measuring device.
2. A control apparatus for controlling regenerative operation of vehicle motor according to claim 1, comprising a regeneration prohibiting device for not allowing the

vehicle motor to perform a regenerative operation when the inter-terminal voltage of any one of the cells reaches the regeneration prohibition voltage before the total voltage measured by the total voltage measuring device reaches the estimated total voltage determined by the total voltage estimating device.

5

3. A control apparatus for controlling regenerative operation of vehicle motor according to claim 1, wherein the regeneration control device sets a greater amount of regeneration when the difference between the estimated total voltage determined by the total voltage estimating device and the total voltage measured by the total voltage

10 measuring device is greater.